

Signs of Clinical Disease in Rodents

Proper health assessment requires evaluation and integration of numerous subjective and objective parameters. The following document is intended to provide investigators with objective parameters for establishing endpoints. This is not an absolute categorization of disease severity in rodents.

Parameter	Disease Severity		
	Mild	Moderate	Marked
	Clinical Signs		
Fur & Posture	Normal or slightly ruffled fur	Ruffled fur ± hunched posture	Ruffled fur & hunched posture
Activity	Slightly reduced exploratory or grooming activity.	Obvious decrease in movement: notably reduced exploratory or grooming activity.	No response to stimuli or, moves only if stimulated. No exploratory or grooming activity.
Dehydration ¹	0-5% (1-2 sec. tent time)	6-10% (2-3 sec. tent time)	>10% (>3 sec. tent time)
Respiration	Normal character	Mild Dyspnea -increased movement of chest wall with breathing.	Moderate Dyspnea- Pronounced movement of chest wall and abdomen with breathing
Body Temp ²	Normal	1.5-2.5 °C above or below normal baseline	Hypothermic-feels cold to touch Body Temp ≤ 3°C below normal baseline
Mucus membrane color	Pink	Pale pink	White or bluish
Neurologic/ Musculoskeletal	Seizures or dysfunction which do not impare homeostasis & activity	Seizures or dysfunction which result in weight loss, dehydration or skin abrasion	Seizures or dysfunction which prevent access to food or water, result in full-thickness skin wounds, ulcers, or retention of urine or feces.
Weight loss ³	1-5%	6-15%	>15%
Body Condition ⁴	Normal to slight loss of body condition	Poor-Segmentation of vertebrae evident. Dorsal pelvic bones easily palpated	Emaciated- Little to no fat and muscle. Skeletal structure very prominent, vertebrae distinctly segmented

1- Pinch skin into a “tent” on the dorsum and release. The time required for the skin to lay flat after release is the tent time. The tent time in animals with normal hydration = < 1sec.

2- Marked diurnal and strain variation noted in rodents. Baseline normal must be established and temp taken at the same time of day.

3- Weight loss over 2 weeks or less.

3-4. Weight loss and body condition score may not be consistent with other clinical parameters. These parameters should be used in conjunction with the other signs to make an appropriate assesment of disease severity. Examples include tumor models and models causing ascites.

4-From Ullman-Cullere, M. H. and Foltz, C. J. (1999). Body condition scoring: a rapid and accurate method for assessing health status in mice. *Lab Anim Sci.* **49(3)**:319-23.

REVIEWED & APPROVED BY THE IACUC: 5/16/2007

Prepared by VCS 6/2005 Revised by Dr. G. DeMarco 5/2007
Reviewed by VCS Clinical Veterinarians